REMARKS

The Office Action dated September 12, 2008 has been received and carefully studied.

The Examiner newly rejects claim 15 under 35 U.S.C. §112, second paragraph, as being indefinite. The Examiner states that the term "acyl" identifies a functional group derived by removal of one or more hydroxyl groups from an oxo acid, and since it is not possible to identify the oxo acid, the claim fails to particularly point out and distinctly claim the intended subject matter.

The rejection is respectfully traversed.

The term "acyl group" is a well known term. For example, it is stated in IUPAC Nomenclature that "C-481.1 - Acyl halides, that is, compounds in which the hydroxyl group of a carboxylic group is replaced by halogen, are named by replacing the name of the corresponding halide after that of the acyl radical."

Wikipedia states that, "In organic chemistry, the acyl group is usually derived from a carboxylic acid of the form RCOOH". A copy of the relevant parts of Wikipedia is attached hereto.

Also, HACKH'S Chemical Dictionary states at page 16: "acyl. An organic radical derived from an organic acid by

the removal of the hydroxyl group". A copy of the relevant parts of HACKH's Dictionary is attached hereto.

Even more compelling is the disclosure in the instant specification, which states at page 10, lines 4-11, that: "A 'lower acyl group' in a substituent of the general formula (1) or (2) means a non-substituted straight chain or branched chain acyl group having 1 to 6 carbon atoms, for example, a formyl group, an acetyl group, a propionyl group, a n-butyryl group, an isobutyryl group, a valeryl group, an isovaleryl group, a pivaloyl group, a hexanoyl group, etc., a preferably group is an acetyl group."

The term "acyl" is thus clearly defined in the specification, and is consistent with the well-known definition. Accordingly, it is believed that the term is sufficiently definite to a person skilled in the art, and withdrawal of the rejection is respectfully requested.

By the accompanying amendment, claim 15 has been amended to increase the readability by reciting hydrogen instead of W'. The Examiner's suggestion to illustrate K as CH_2 and M as CH_2 in Formula (1) has not been adopted, because this would confuse the case where J-K-L-M are defined as C(O-Y)=CH-C(W)=CH (in which case K and M are each CH, not CH_2). However, the readability of the claim has been increased by defining K as CH_2 (rather than $(CH_2)_q$) and by

defining M as CH_2 (rather than $(CH_2)_m$), and by deleting the phrase "m and q are an integer of 1".

Reconsideration and allowance is respectfully requested in view of the foregoing.

Respectfully submitted,

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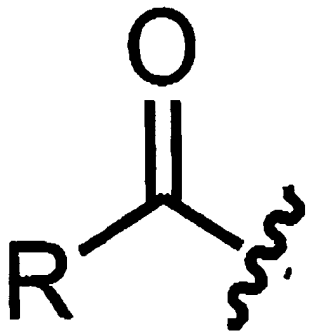
Acyl

From Wikipedia, the free encyclopedia
(Redirected from Acylium)

An **acyl group** (IUPAC name: **alkanoyl**) is a functional group derived by the removal of one or more hydroxyl groups from an oxoacid.[1] In organic chemistry, the acyl group is usually derived from a carboxylic acid of the form RC(=O)OH. It therefore has the formula RC(=O)-, with a double bond between the carbon and oxygen atoms (i.e. a carbonyl group), and a single bond between R and the carbon. Acyl groups can also be derived from other types of acids such as sulfonic acids, phosphonic acids, and some others.



Acyl halides can be used in Friedel-Crafts acylation to introduce the acyl moiety in an aromatic compound.

In biochemistry, acyl CoAs are derivates of fatty acid metabolism, with acetyl CoA as an example. They are actually thiol esters.

Contents

Examples

The names of acyl groups are typically derived from the corresponding acid by substituting the acid ending -ic with the ending -yl as shown in the table below. Note that methyl, ethyl, propyl, butyl etc. end in -yl are not acyl but alkyl groups, derived from alkanes.

Acyl group name (R-CO-)		Corresponding carboxylic acid name (R-CO-OH)	
common	**systematic**	**common**	**systematic**
formyl	methanoyl	formic acid	methanoic acid
acetyl	ethanoyl	acetic acid	ethanoic acid
propionyl	propanoyl	propionic acid	propanoic acid
benzoyl		benzoic acid	
acryl	propenoyl	acrylic acid	propenoic acid

Acyl species

In **acyloxy** groups the acyl group is bonded to oxygen: R-C=O-O-R' where R-C=O is the acyl group.

Acylium ions are cations of the type $R\text{-}C^{+}{=}O$ and play an important role as intermediates in organic reactions [1] for example the Hayashi rearrangement.

References

1. ^ a b Compendium of Chemical Terminology, acyl groups

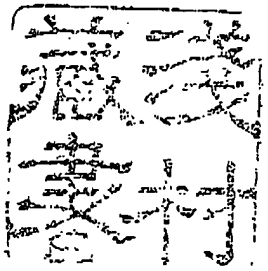
See also

- Acylation

Retrieved from "http://en.wikipedia.org/wiki/Acyl"
Category: Functional groups

HACKH'S

CHEMICAL DICTIONARY



hydrochloric acid (the *kinase*) into pepsin (the *active enzyme*). (3) Excitation. (4) Irradiation. (5) A. of carbon, e.g., by heating with steam, or sulfuric acid.

activator. (1) A catalyst. (2) A substance used in flotation to produce a coating having metallic properties; as, sodium sulfide for lead carbonate ores.

activatory. See *phase.*

active. (1) Dynamic or working, as opposed to static or inert. (2) Having optical properties, as an asymmetric carbon atom. Cf. *optical activity.* **surface-** See *surfactant.*

a. deposit. The formation of a radioactive layer on a substance exposed to radio elements. **a. immunity.** The stimulation of an organism to produce substances protective against infection by bacteria. **a. immunization.** The processes by which the protective agencies of an organism are made resistant to bacterial invasion. **a. mass.** The number of moles (gram-molecules) in a unit volume (1 liter). **a. oxygen test.** A test for rancidity in fats, by the liberation of iodine from potassium iodide in acetic acid. **a. principle.** The substance responsible for the physiological action of a drug: e.g., an alkaloid.

activin. An organic iodine compound of casein used medicinally.

activity. (1) The rate in watts at which work is performed. Cf. *action.* (2) The ratio of the escaping tendency (*fugacity*) of two phases at the same temperature. A correction applied to the concentration of a strong electrolyte, to satisfy Ostwald's dilution law, q.v. (3) A measure of interionic forces. Cf. *a. coefficient.* **amylolytic-** Digestive power of amylase. **excited-** Active deposit. **ionic-** Thermodynamic concentration. In a dilute solution which obeys the gas laws, the i.a. equals the concentration; in other solutions the value which ensures that the gas laws hold. **optical-** The capacity of a substance to rotate the plane of polarized light. **peptic-** Digestive power of pepsin. **radio-** See *radioactivity.* **tryptic-** Digestive power of trypsin.

a. of activated carbon. The percentage of carbon disulfide vapor absorbed by carbon (generally 50%).

a. coefficient. The ratio a/c; see *activity* (2).

actol. Silver lactate.

actomyosin. A combination of actin and myosin, q.v., which comprises the tractile muscle system.

acton. Ethyl orthoformate.

actor. A compound which takes part in both primary and secondary reactions. See *induced reactions.*

acute. Quick, short, or sharp. Cf. *chronic.* **a. poisoning.** See *poisoning.*

acyclic. Describing organic compounds which contain no ring system; as, the methane series. Synonym: Aliphatic (chains). Antonym: Cyclic, aromatic (rings).

acyl. An organic radical derived from an organic acid by the removal of the hydroxyl group; e.g., R·CO— is the a. radical of R·CO·OH. See *acetyl, benzenesulfonyl, benzoyl,* etc. **a. derivative.** An organic compound containing an a. radical; e.g., amides, $R{\cdot}CO{\cdot}NH_2$. **a. radical.** Acyl.

acylation. Acidylation. The formation or introduction of an acyl radical in or into an organic compound.

acyloin. R·CO·CHOH·R. An organic compound formed by condensation of aldehydes, as, Ph·CO·CHOH·Ph, benzoin.

aczol. An ammoniacal solution of zinc and copper phenolates; a wood preservative.

adaline. $Et_2CBr{\cdot}CO{\cdot}NH{\cdot}CO{\cdot}NH_2 = 237.1$. Carbromal, α-bromo-α-ethylbutyrylurea. White crystals, m.116, slightly soluble in water; a hypnotic and sedative.

adamant. A hard mineral; as, diamond.

adamantine. Diamond. **a. boron.** See *boron.* **a. spar.** A dark gray, smoky variety of corundum from India; green in transmitted light.

adamellose. An igneous andesite-diorite rock containing hornblende, feldspar, quartz, chlorite, agnetite, apatite, and rutile (Pigeon Point, Minn.).

Adam galactometer. A graduated buret with two glass bulbs, used in milk analysis.

adamine. Adamite.

adamite. Zn_2HAsO_5. Adamine. A native arsenate; yellow orthorhombic crystals (Chile, Greece).

Adamkiewicz reaction. Protein solutions give a violet ring when layered on glacial acetic acid and concentrated sulfuric acid.

adamon. Dibromodihydrocinnamic acid ester of borneol; a sedative and anaphrodisiac.

adamsite. (1) A greenish-black mica. (2) Diphenylamine chlorarsine. Adansonia. *Adansonia digitata* (Bombacaceae), the baobab tree of Africa, yields edible boui or monkey bread. The bark is an emollient; the dried leaves, lalo, are an antipyretic; the fibers are suitable for paper.

adansonine. An alkaloid from the bark and leaves of *Adansonia digitata.* Colorless white crystals; a febrifuge.

adaptation. The advantageous adjustment of an organism to a change in its surrounding.

adapter. A tapered glass tube used to connect a retort or condenser with the receiving vessel.

adatom. An atom adsorbed on a surface so that it will migrate over the surface like a two-dimensional gas. Cf. *adion.*

addiction. Devotion to or the habitual use of a substance or practice. **a.-producing drugs.** Drugs subjected to international control by the World Health Organization because of their a.-producing powers.

addition. A chemical reaction which involves no change of valency; usually the union of two binary molecules to form a more complex compound; as, $HCl + NH_3 = NH_4Cl$. **a. compound.** Adduct. An inorganic compound formed by addition; e.g., NH_4Cl.

additive. Added to. **a. compound.** An organic compound formed by the saturation of one or more double or triple bonds of an unsaturated compound; e.g., benzene hexachloride, $C_6H_6Cl_6$, is an additive compound of benzene. **a. property.** A property of a molecule which is the sum of the individual properties of the atoms or linkages composing it; thus, when the molecular refractivity of a molecule is the sum of the atomic refractivities of its atoms.

adduct. Addition group or compound.

adduction. Oxidation.

adelgesin. $C_{28}H_{28}O_{15} = 544.3$. Light brown needles, m.205. A glucosidal constituent of the bark of "pineapple" gall, produced by *Adelges abietes.*